

## Section VII

## EXTRACTION SYSTEMS

## 2-17. Use

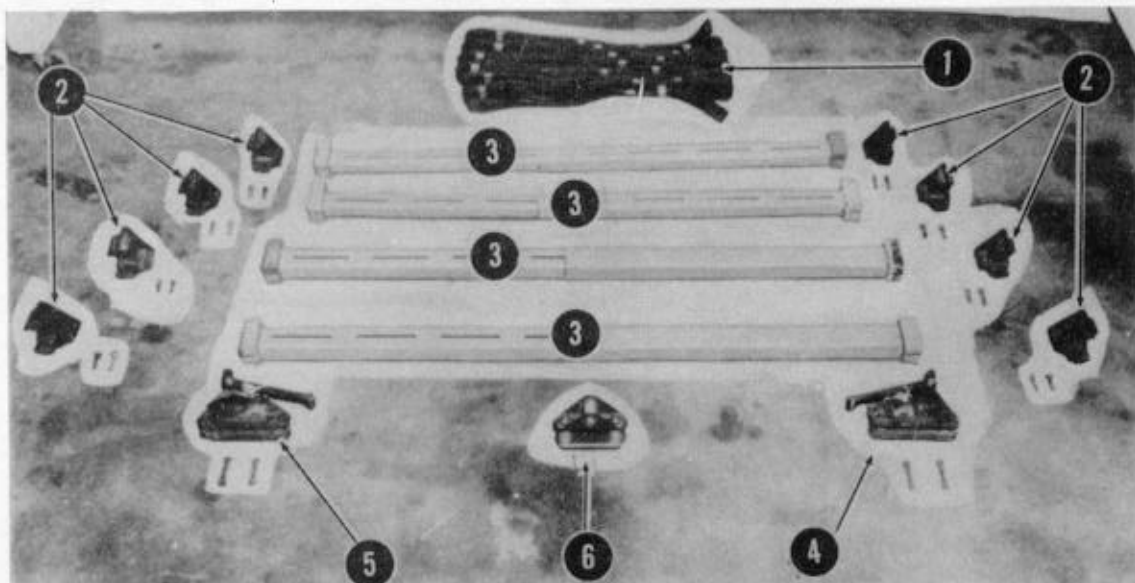
An extraction system includes items such as the extraction parachute and extraction lines. The system is bolted to the drop item or airdrop platform and is used to pull the load from the aircraft. For a low-velocity airdrop, the load exits through the cargo ramp or door of the aircraft. The extraction force is then transferred to the deployment line which aids in the deployment of the cargo parachute.

## 2-18. Components

The components of the extraction systems used on low-velocity and LAPE airdrop loads are given below.

*a. Low-Velocity Airdrop.* These extraction systems are authorized for use in low-velocity airdrops. The three extraction systems are as follows.

(1) PEFTC. The PEFTC components, as shown in Figure 2-8, are assembled and bolted to the side rails of a type II platform. The PEFTC is used on platform-extracted loads weighing between 2,520 and 15,000 pounds for C-130 aircraft and 2,520 to 18,750 pounds for C-141 aircraft.



① 36-foot (1-loop), type XXVI or 36-foot (2-loop), type XIX nylon webbing extraction bridle

② Tube support brackets

③ Guidance tube assemblies

④ Left-hand actuator assembly

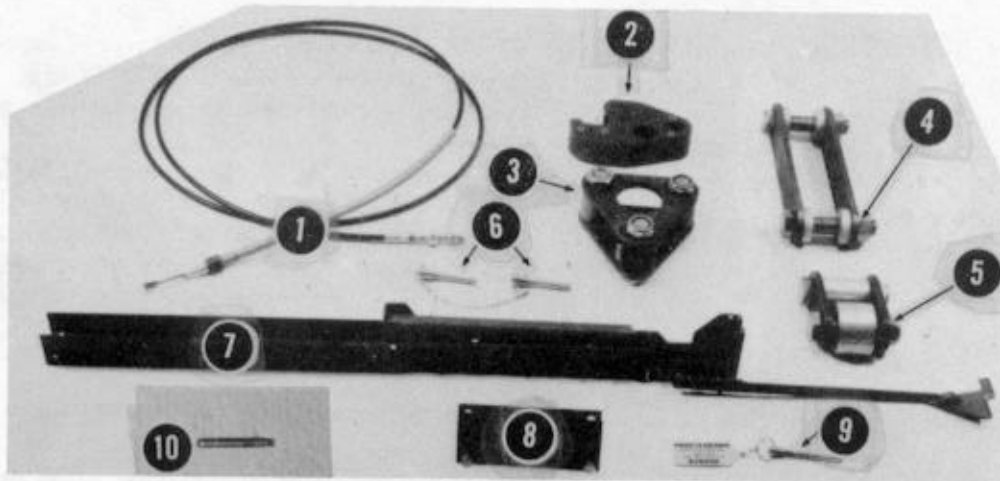
⑤ Right-hand actuator assembly

⑥ Coupling link assembly

Figure 2-8. Components of PEFTC

(2) **EFTC.** The EFTC components, as shown in Figure 2-9, are assembled with a 12-, 16-, 20-, 24-, or 28-foot cable to extract loads weighing

between 2,520 and 42,000 pounds. The EFTC is the only extraction system that can be used when airdropping platforms from C-5 aircraft.

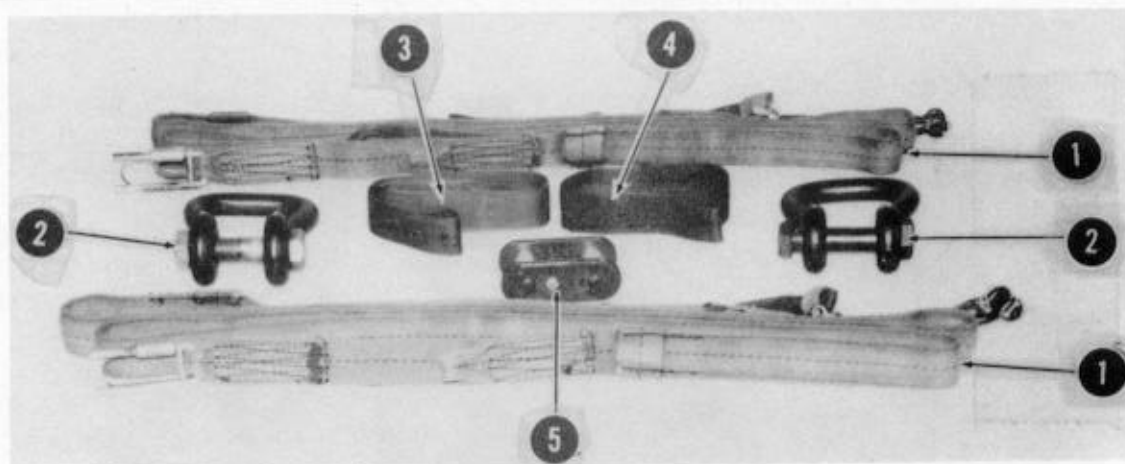


- ① Cable assembly (12-, 16-, 20-, 24-, or 28-foot)
- ② Latch assembly
- ③ Link assembly
- ④ Adapter latch assembly
- ⑤ Adapter link assembly
- ⑥ Quick-release pins (pip pins)
- ⑦ Actuator assembly
- ⑧ Actuator bracket
- ⑨ Locking pin
- ⑩ Actuator arm extension pin (C-5 aircraft only)

Figure 2-9. Components of EFTC

(3) **SL/CS.** The SL/CS components, as shown in Figure 2-10, are assembled to extract loads weighing between 2,520 and 25,000 pounds. See

Table 2-7 for weight limitations on platform extracted loads using the SL/CS.



- ① Breakaway static lines with release lines and 7-inch connector web with a small clevis
- ② Large suspension clevis assemblies (one used as the extraction clevis and the other as the attaching point clevis)
- ③ 60-inch, type X nylon webbing connector strap
- ④ 120-inch, type X nylon webbing connector strap
- ⑤ Type IV link assembly

Figure 2-10. Components of SL/CS

Table 2-7. Weight limitations on platform-extracted loads using the SL/CS

Platform	Aircraft	Maximum Weight Limitations (Pounds)
Type II and LAPES	C-130	17,000
Type II and LAPES	C-141	17,000
Type V	C-130	17,500
Type V	C-141	18,500
Type V	C-5*	
	NA	

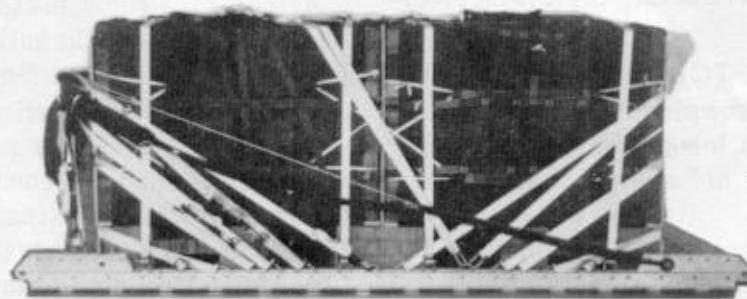
\*The EFTC is the only extraction system that can be used when airdropping platforms from C-5 aircraft.

**b. LAPE Airdrop.** Items 6 through 10, 12, 13, and 14 of Figure 2-2, along with the correct number and lengths of extraction slings, are bolted or lashed to a LAPE load (Figure 2-11) weighing between 6,700 and 42,000 pounds.

**Note:** For a tandem LAPE airdrop, use items 12, 13, and 14 of Figure 2-2.



TYPE II PLATFORM



TYPE V PLATFORM

- ① 23-inch bridle plate
- ② 20-inch bridle plate
- ③ 3 3/4-inch, two-point link assembly
- ④ Attitude control bar
- ⑤ Four-point link assembly (covered)
- ⑥ 20- or 28-foot, type XXVI nylon webbing extraction slings
- ⑦ 60-foot, type XXVI nylon webbing extraction line

Figure 2-11. Extraction items bolted or lashed to platform

## 2-19. Operation

The various extraction systems for low-velocity and LAPE airdrops and how they operate are described below.

### a. Low-Velocity Airdrop.

#### (1) PEFTC.

(a) After the extraction parachute has deployed, it pulls on the coupling link assembly (item 6, Figure 2-8) which pulls on the extraction bridle (item 1, Figure 2-8) and extracts the load from the aircraft.

(b) Each end of the extraction bridle is hooked to a bridle retainer of each actuator (items 4 and 5, Figure 2-8). The arms of the actuators ride on top of the rails in the aircraft. When the actuators have been pulled clear of the rails, the arms of the actuators rotate downward and allow the bridle retainer to release the bridle.

(c) The extraction parachute then pulls on the deployment line which breaks or cuts the parachute restraint. The extraction force then deploys the recovery parachute.

**Note: When the PEFTC is used with an 8-foot or 12-foot LAPE airdrop platform, the platform must have 4 1/8-inch, low-profile side rails and actuator mounting holes which have been modified.**

#### (2) EFTC.

(a) After the extraction parachute has deployed, it pulls on the link assembly or the adapter link assembly (items 3 and 5, Figure 2-9) and pulls the load from the aircraft.

(b) The arm of the actuator assembly (item 7, Figure 2-9) rides on top of the left rail in the C-5 aircraft. The actuator arm extension pin rides on top of the left ramp rail in the aircraft. When the actuator has been pulled clear of the rails, the arm of the actuator rotates downward and pulls on the cable (item 1, Figure 2-9) hooked to the catch inside the latch assembly (item 2, Figure 2-9). This causes the catch to release the link assembly.

(c) The extraction parachute then pulls on the deployment line which, in turn, breaks or cuts the parachute restraint. The extraction force then deploys the recovery parachute.

#### (3) SL/CS.

(a) After the extraction parachute has deployed, it pulls on the extraction clevis (item 2, Figure 2-10) which is attached to the attaching point clevis (item 2, Figure 2-10) with a connector strap (item 3 or 4, Figure 2-10). The attaching point clevis is bolted to the drop item or to slings that are bolted to the item or the side rails of the platform.

(b) The knives on the static lines (item 1, Figure 2-10) are installed on the connector strap, and the clevises on the static lines are bolted around the anchor cables of the aircraft.

(c) When the load is pulled to the rear of the aircraft, stops on the anchor cables halt the static lines. As the load continues to exit the aircraft, the static lines are pulled taut and the knives cut the connector strap. The force is then transferred to the release line and deployment line. The release line pulls through the loops of the static lines separating the release line and static lines from the connector links of the 7-inch connector webs. The extraction parachute continues to pull which breaks or cuts the parachute restraint. The extraction force then deploys the recovery parachute.

**b. LAPE Airdrop.** The drogue parachute (15-foot cargo extraction parachute) is released from the bomb shackle using the aerial delivery system. When the drogue parachute deploys, it applies its force (approximately 5,900 pounds at 130 KIAS) to a tow plate installed on the cargo ramp, and it is towed fully inflated for about 10 to 20 seconds. At the appropriate location, the green light is turned on which energizes an electrical solenoid. The solenoid moves a latch in the tow plate and transfers the force of the drogue parachute from the tow plate to the extraction parachutes. The extraction parachutes then deploy and extract the load.